



Dart Aerospace Ltd.
1270 Aberdeen St
Hawkesbury, ON
K6A 1K7
Canada

Tel (613) 632-5200

D206-642-151

Job Sheet 171299



Part No: D206-642-151

Job Qty: 1 ea

Part Name: Replacement Skidtube, Low Gear with Run-on Landing Fits LH or RH



Part Weight: 0 lbs

Status: Scheduled

Priority: Medium

Job Created: 1/30/18

Job Tracking No:

Due Date: 2/26/18

Created By: Michelle Gagnon-Donovan

Type: Stock

Description:

Note: DWG D3804 REV A(DEO), IIN-D206-642 REV Q SHEETS 13,26 IPP REV:A 10.12.08 PER IIN REV.N DD
VERF:EC IPP REV:B 11.09.16 PER IIN REV.O DD VERF:EC IPP Rev:C 12.11.22 now swage per ecn12-679
DD verf:JLM IPP Rev:D 14.04.24 ECN14-520 DD verf:JLM IPP Rev:E 16.04.04 as per CHG004(ecn16-553)
DD verf:JLM

Ship Via:

Bill of Materials

DART
AEROSPACE
S041412



**Replacement Skidtube, Low Gear with Run – on Landing Fits
LH or RH**

PART NO: D206 – 642 – 151

Original Serial #: S041412

Revision:

Operation: Start up Operation 02/12/18

Change No: CHG004

Job No: 171299

Dart Aerospace Ltd.

1270 Aberdeen Street
Hawkesbury, ON K6A 1K7
CANADA
TEL.: 1 613 632 – 5200
Email: sales@dartaero.com
www.dartaerospace.com

S041412x1 xRH

Job Routing									
Op No	Operation	Qty	Start Date	Due Date	Standard		Workcenter/Supplier		Sign-off
					Setup hrs	Run Hrs	Workcenter / Supplier	Lead Time	
90	Start up Operation	1 Ea	2/23/18	2/23/18	0.00	0.00	Start Up Skid tubes-1		
110	Skid tubes	1 pcs	2/23/18	2/23/18	0.00	1.82	Skid tubes-2		BE
120	QC	1 pcs	2/23/18	2/23/18	0.00	0.00	QC6		PD 18-02-13
130	QC	1 pcs	2/23/18	2/23/18	0.00	0.00	QC9		PD 18-02-13
140	HandFinish	1 pcs	2/23/18	2/23/18	0.00	0.33	HandFinish1		PD 18-02-13
150	QC	1 pcs	2/23/18	2/23/18	0.00	0.00	QC7-1		BE
160	Skid tubes	1 pcs	2/24/18	2/24/18	0.00	2.00	Skid tubes-2		BE
180	Skid tubes	1 pcs	2/24/18	2/24/18	0.00	1.82	Skid tubes-2		BE
190	QC	1 pcs	2/24/18	2/24/18	0.00	0.00	QC5		PD 18-02-27
200	Skid tubes	1 pcs	2/24/18	2/24/18	0.00	2.84	Skid tubes-2		BE, Y, Y
215	QC	1 pcs	2/24/18	2/24/18	0.00	0.00	QC9		PD 18-3-6
220	QC	1 pcs	2/24/18	2/24/18	0.00	0.00	QC10		PD 18-3-6
230	QC	1 pcs	2/24/18	2/24/18	0.00	0.00	QC5		PD 18-3-6
240	HandFinish	1 pcs	2/24/18	2/24/18	0.00	0.78	HandFinish2		BE 18-3-6
250	Powdercoat	1 pcs	2/24/18	2/24/18	0.00	0.25	Powdercoat1		BE 18-03-19
260	QC	1 pcs	2/24/18	2/24/18	0.00	0.00	QC3		BE 18-03-19
270	HandFinish	1 pcs	2/24/18	2/24/18	0.00	0.60	HandFinish4		BE 18-03-19
280	HandFinish	1 pcs	2/26/18	2/26/18	0.00	0.60	HandFinish3		BE 18-04-02
290	QC	1 pcs	2/26/18	2/26/18	0.00	0.00	QC3		38 DAS
300	QC	1 pcs	2/26/18	2/26/18	0.00	0.00	QC5		9-88 38
305	DC	1 pcs	2/26/18	2/26/18	0.00	0.00	DC		9-88
310	Packaging	1 pcs	2/26/18	2/26/18	0.00	0.00	Packaging3-1		amb
320	QC21-FG	1 Ea	2/26/18	2/26/18	0.00	0.00	QC21		21 MAY 15 2018

Part Op 110 - 1-Deburr Fwd edge of tube 2- Remove ridge on inside of Fwd edge of tube as per Dwg D3804 3- Weld Fwd Cap as per Dwg D3804. Use aluminum rod. Grind D2647 to fit as required.

160 - 1-Open holes of detail B to finished size as per Dwg DEO D3804, (without cutting fluid) 2-C'sink one crossbolt spacer hole as per Dwg D3804 DEO Detail B (without cutting fluid) 3-Deburr and blow out all chips from inside the tube
 180 - 1-Locate, install and rivet doublers as per Dwg D3804. Micro-shave rivets as required 2-Bond D2654-1 web in place as per QSI 015. Ensure holes line up. Allow 12 Hrs. cure time before cutting
 200 - 1-Remove alodine in one area see DEO Detail B from around hole and prepare for welding 2-Prep per QSI 005 and Insert one D2649 crossbolt spacer. Weld as per QSI 004 and Dwg D3804. Remember to back drill each hole to 0.25" before welding the other side. Use aluminum rod. 4/18/18/158

250 - Make sure Nut Plate Thread is protected using paint screw, and mask GHW studs. START TIME: _____
 270 - 1-Install D2651-3 O-Rings on D2651-1 plugs with Petroleum Jelly and install plugs as per Dwg D3804. Clean excess adhesive. 2- Install D2680-041 Nut Plate as per Dwg D2650

280 - 1-Install D2646 Aft Cap and seal with Sikaflex. Clean excess adhesive

305 - Photocopy bluefile & type labels per PPP D206-642-151 CHG004

310 - Identify and pack for shipping as per PPP D206-642-151 Location : FG083

M 138760 START 9:30 OUT: 3:20 FINISH 10:00

Sika Flex M138761

18/04

Wing walk M138761

Job BOM				
Part / Item	Component Name	Quantity	Operation	Container
D2620	Skidtube, 206 Skidtube	1 Ea (1 ea)	90-Start up Operation	8163195
D2647	Cap	1 Ea (1 ea)	90-Start up Operation	8163996
CCR264SS3-3	Cherry Rivet	2 Ea (2 ea)	180-Skidtubes	
CR3212-4-03	Cherry Rivet	2 Ea (2 ea)	180-Skidtubes	
CR3212-4-04	Cherry Rivet	52 Ea (52 ea)	180-Skidtubes	501708853
D2654-1	Web	1 Ea (1 ea)	180-Skidtubes	5161741
D3286-1	Doubler	2 Ea (2 ea)	180-Skidtubes	5164714
D2649	Cross Bolt Spacer	1 Ea (1 ea)	200-Skidtubes	5196930
D3286-3	Spacer	2 Ea (2 ea)	200-Skidtubes	591160
D4720-1	Spacer	18 Ea (18 ea)	200-Skidtubes	5014595
D2651-1	Plug	6 Ea (6 ea)	270-HandFinish	
D2651-3	O-Ring	6 Ea (6 ea)	270-HandFinish	
D2680-041	Nut Plate	1 Ea (1 ea)	270-HandFinish	
AN3-37A	Bolt	7 Ea (7 ea)	280-HandFinish	
D2646	Aft Cap	1 Ea (1 ea)	280-HandFinish	
D3805-041	Run-on Landing Wearplate Fwd	1 Ea (1 ea)	280-HandFinish	
D3805-045	Run-on Landing Wearplate Aft	1 Ea (1 ea)	280-HandFinish	
D3873-1	Bushing	14 Ea (14 ea)	280-HandFinish	
MS21042L3	Nut	7 Ea (7 ea)	280-HandFinish	
MS27039-1-08	Screw	2 Ea (2 ea)	280-HandFinish	
MS27039-4-06	Screw	1 Ea (1 ea)	280-HandFinish	
NAS1149D0332J	Washer	2 Ea (2 ea)	280-HandFinish	
NAS1149D0363J	Washer	7 Ea (7 ea)	280-HandFinish	
NAS1149D0463J	Washer	1 Ea (1 ea)	280-HandFinish	

Job Allocations				
Operation	Component Part	Required	Inventory	Allocated
90-Start up Operation	D2620	1	10	0
	D2647	1	31	0
180-Skidtubes	CCR264SS3-3 FM137622	2	180	0
	CR3212-4-03 FM137886-0	2	208	0
	CR3212-4-04	52	287	0
	D2654-1	1	2	0
	D3286-1	2	22	0
200-Skidtubes	D2649	1	126	0
	D3286-3	2	26	0
	D4720-1	18	439	0
270-HandFinish	D2651-1 F163288	6	126	0
	D2651-3 5027453	6	503	0
	D2680-041 F158428	1	55	0
	AN3-37A 5034387	7	39	0
280-HandFinish	D2646 F164005	1	105	0
	D3805-041 F162016	1	2	0
	D3805-045 5034482	1	10	0
	D3873-1 5056873	14	59	0
	MS21042L3 5037284-1	7	3,805	0
	MS27039-1-08 FM138208-1	2	437	0
	MS27039-4-06 FM137957-1	1	91	0
	NAS1149D0332J 5020606	2	4,012	0
	NAS1149D0363J 5015269	7	3,717	0
	NAS1149D0463J 5045845	1	3,420	0
Part Specifications				
Specifications could not be found.				

Plex 2/7/18 8:54 AM Dart.Gagnon.Michelle

001760

002152

ITEM	Qty -041	Qty -043	Part Number	Description
1	X		D3804-041	SKIDTUBE ASSEMBLY, 206 A/B LOW
2		X	D3804-043	SKIDTUBE ASSEMBLY, 206 A/B HIGH
5	1	1	D2600-1-160	EXTRUSION
6	1	1	D2646	AFT CAP
7	1	1	D2647	CAP
8	19	20	D2649	CROSS BOLT SPACER
9	6	8	D2651-1	PLUG
10	6	8	D2651-3	O-RING
11		1	D2654-3	WEB
12	1		D2654-1	WEB
13	1	1	D2680-041	NUT PLATE
14	2	2	D3286-1	DOUBLER
15	2	2	D3286-3	STUD
21	2	2	AN980JD10L	WASHER
22	1	1	AN980JD416	WASHER
23	2	2	CCR264SS3-3	RIVET
24	2	2	CR3212-4-03	RIVET
25	52	52	CR3212-4-04	RIVET
26	2	2	MS27039-1-08	SCREW
27	1	1	MS27039-4-06	SCREW

NOTES

- 1) MATERIAL: N/A
- 2) FINISH: -CHEMICAL CONVERSION COAT PER DART QSI 005 4.1
-POWDER COAT WHITE (4.3.5.1) PER DART QSI 005 4.3
- 3) BLACK ANTI-SKID PAINT AS INDICATED TO 0.5 ABOVE LOCATION RIDGE PER DART QSI 005 4.4
- 4) TOLERANCES ARE PER DART QSI 018 UNLESS OTHERWISE NOTED
- 5) UNITS: INCHES UNLESS OTHERWISE NOTED
- 6) BREAK SHARP EDGES: 0.005 TO 0.010 MAX
- 7) IDENTIFICATION: NONE
- 8) WEIGHT: 12.5 lb
- 9) WELD PER DART QSI 004
- 10) BENDING: DAMAGE TOLERANCE ON FWD BEND:
THERE SHOULD BE NO VISIBLE WRINKLES IN THE BEND FROM THE GROUND TO A HEIGHT OF 5 INCHES ABOVE THE GROUND. IT IS ACCEPTABLE TO POLISH OUT GOUGES UP TO 0.020 DEEP IN THE BENT PORTION OF THE TUBE. A MAXIMUM REDUCTION IN DIAMETER OF 0.150" IS ACCEPTABLE IN THE BENT PORTION OF THE TUBE.
- 11) BOND WEB INTO OUTER TUBE WITH SIKAFLEX-241/-291 ADHESIVE PER DART QSI 015
- 12) INSERT D2651-1 PLUG C/W D2651-3 O-RING IN HOLES MARKED 'P' (BOTH SIDES OF TUBE)

SHOP COPY
RETURN TO
ENGINEERING
UNCONTROLLED COPY
SUBJECT TO AMENDMENT
WITHOUT NOTICE
WORK ORDER
NO. 171299 *mf*

FEB 08 2018

DEO ATTACHED

RELEASED
UP 09.03.03
per ECN 09-538

A	NEW ISSUE	MB	08.07.07
REV.	DESCRIPTION	BY	DATE
DESIGN	<i>93</i>		
DRAWN			
CHECKED	<i>93</i>		
MFG. APPR.	<i>93</i>		
APPROVED	<i>93</i>		
DE APPR.	<i>93</i>		
DATE	08.07.07		

DART AEROSPACE USA, INC
PORT HADLOCK, WA

DRAWING NO. D3804
REV. A
SHEET 1 OF 5

TITLE SKIDTUBE ASSEMBLY, 206A/B
SCALE NTS

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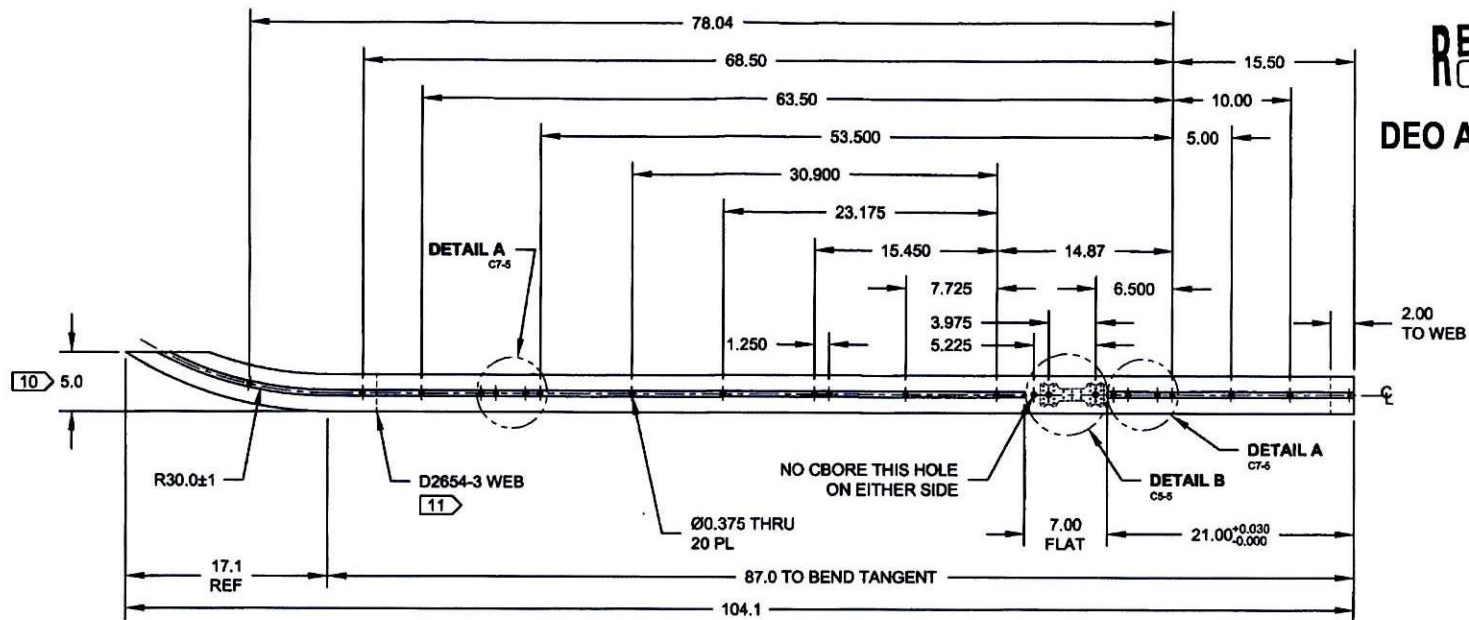
DEO ATTACHED



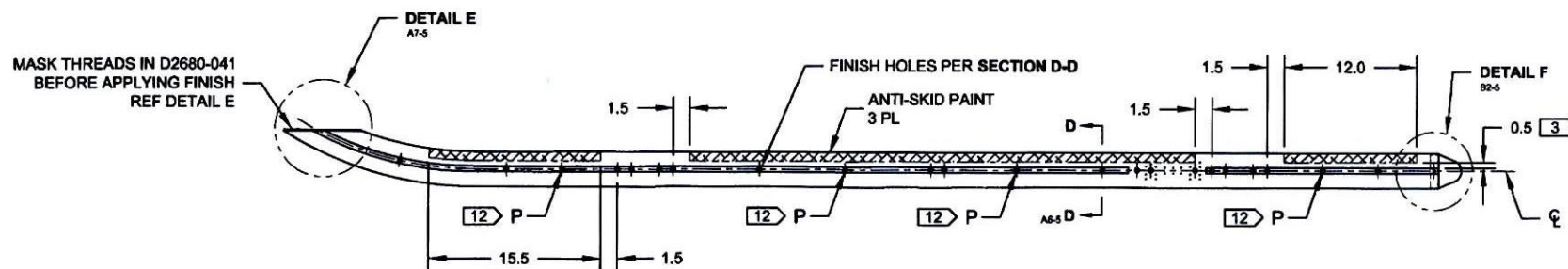
DESIGN	<i>99</i>	DART AEROSPACE USA, INC	
DRAWN		PORT HADLOCK, WA	
CHECKED	<i>9</i>	DRAWING NO.	REV. A
MFG. APPR.	<i>9</i>	D3804	SHEET 2 OF 3
APPROVED	<i>99</i>	TITLE	SCALE
DE APPR.	<i>9</i>	SKIDTUBE ASSEMBLY, '206A/B	NT
DATE	08.07.07	COPYRIGHT © 2006 BY DART AEROSPACE USA, INC THIS DOCUMENT OR ANY PARTS THEREOF ARE NOT TO BE REPRODUCED OR TRANSMITTED IN ANY FORM OR BY ANY MEANS, ELECTRONIC OR MECHANICAL, INCLUDING PHOTOCOPYING, RECORDING, OR BY ANY INFORMATION STORAGE AND RETRIEVAL SYSTEM, WITHOUT PERMISSION IN WRITING FROM DART AEROSPACE USA, INC.	

RELEASED
 09.13.97

DEO ATTACHED



D3804-043 BENDING/DRILLING DETAIL

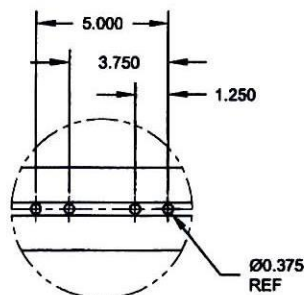


D3804-043 ASSEMBLY/FINISHING DETAIL

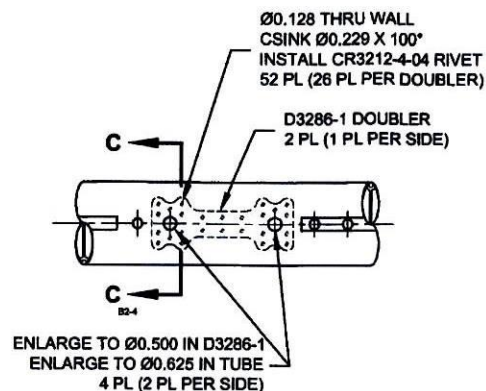
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DRAWN	1	PORT HADLOCK, WA	
CHECKED	2	DRAWING NO.	REV. A
MFG. APPR.	3	D3804	SHEET 3 OF 5
APPROVED	12	TITLE	SCALE
DE APPR.	11	SKIDTUBE ASSEMBLY, 206A/B	NTS
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09.03.03

DEO ATTACHED



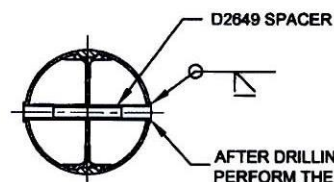
DETAIL A D6-2
C2-2
D6-3
C2-3
SCALE NONE



DETAIL B C3-2
C3-3
SCALE NONE

- TO INSTALL D3286-1/-3:
1. GRIND OFF FLANGE IN AREA SHOWN, FLUSH WITH OUTSIDE SURFACE OF ROUND TUBE
 2. LOCATE & DRILL D3286-1 DOUBLER USING DT3286-1T1
 3. ENLARGE HOLES IN D3286-1 TO Ø0.500
 4. ENLARGE HOLES IN TUBE TO Ø0.625 AND CHAMFER HOLE 0.03 X 45°
 5. RIVET D3286-1 TO TUBE
 6. INSERT D3286-3 SPACER
 7. WELD IN PLACE AND GRIND FLUSH

SECTION C-C C6-4
PARTIAL SECTION
SCALE NONE



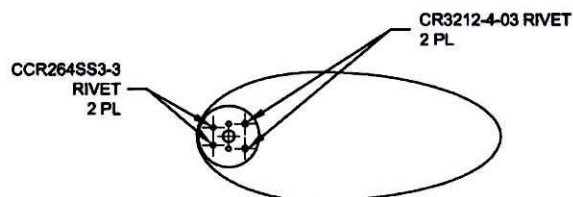
SECTION D-D A4-2
A4-3
FOR Ø0.375 HOLES ONLY
SCALE NONE

- AFTER DRILLING AND BENDING ASSEMBLY
PERFORM THE FOLLOWING FOR Ø0.375 HOLES ONLY:
1. CHAMFER HOLE 0.03 X 45°
 2. INSERT D2649 SPACER
 3. WELD INTO PLACE AND GRIND FLUSH
 4. CBORE TO Ø0.313 X 0.75 DP (EXCEPT WHERE INDICATED)

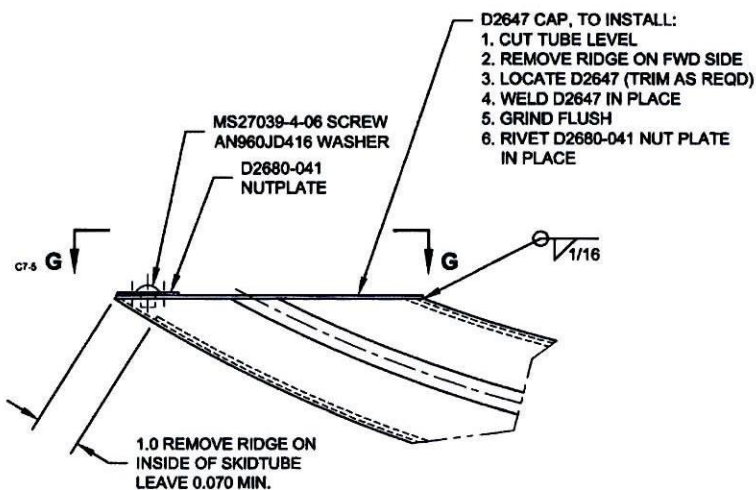
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DRAWN	J	PORT HADLOCK, WA	
CHECKED	P	DRAWING NO.	REV. A
MFG. APPR.	E	D3804	SHEET 4 OF 5
APPROVED	JP	TITLE	SCALE
DE APPR.	H	SKIDTUBE ASSEMBLY, 206A/B	NTS
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01.03.03

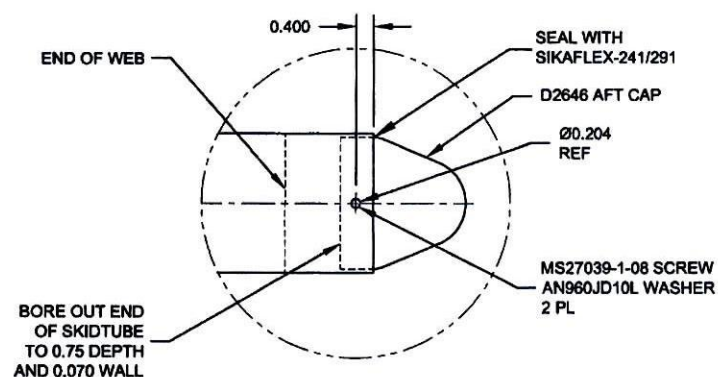
DEO ATTACHED



VIEW G-G
SCALE NONE A7-5



DETAIL E
SCALE NONE B7-2 B7-3



DETAIL F
SCALE NONE B2-2 B2-3

DESIGN	91	DART AEROSPACE USA, INC	
DRAWN	1	PORT HADLOCK, WA	
CHECKED	91	DRAWING NO.	REV. A
MFG. APPR.	91	D3804	SHEET 5 OF 5
APPROVED	91	TITLE	SCALE
DE APPR.	91	SKIDTUBE ASSEMBLY, 206A/B	NTS
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DRAWING NO. D3804	TITLE SKIDTUBE ASSEMBLIES, 206A/B	REV. A	DART AEROSPACE LTD ENGINEERING ORDER		D.E.O. NO. D3804-A-1	SHEET NO. SHEET 1 OF 1	SCALE NTS
DRAWN <i>CP</i>	CHECKED A.R.	MFG. APPR. <i>[Signature]</i>	APPROVED <i>[Signature]</i>	DE APPR. <i>[Signature]</i>			
DATE 12.10.12	DATE 12.10.22	DATE 12.10.22	DATE 12.10.22	DATE 12.10.22			

PURPOSE:

CHANGE C'BORED WELDED CROSSBOLT SPACERS TO SWAGED SPACERS

CHANGE:

PARTS LIST IS AMENDED AS FOLLOWS:

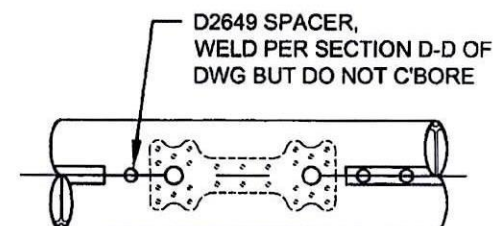
IS:

QTY	QTY	PART NUMBER	DESCRIPTION
-041	-043		
1	1	D2649	CROSS BOLT SPACER
18	19	D4720-1	SPACER

WAS:

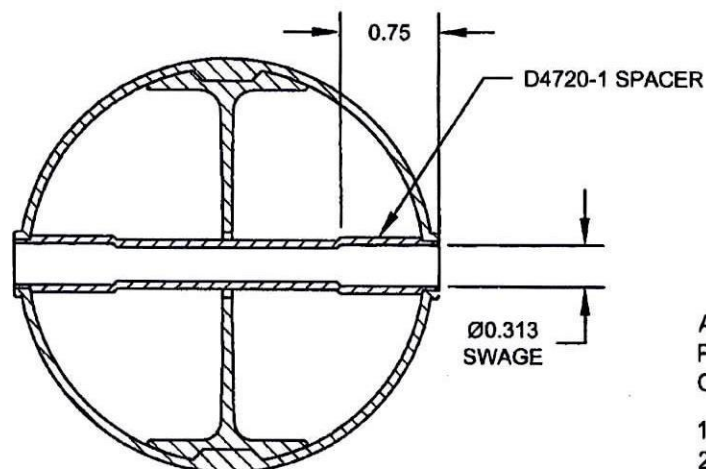
19	20	D2649	CROSS BOLT SPACER
----	----	-------	-------------------

ADD SECTION H-H BELOW, WHICH IS THE SAME SECTION VIEW AS SECTION D-D OF DWG.
C'BORED HOLES ARE **NOW SWAGED** PER SECTION H-H BELOW. FOR THE Ø0.375 HOLE THAT IS NOT C'BORED, WELD PER SECTION D-D OF DWG (SEE AMENDED DETAIL B FOR REFERENCE).



DETAIL B

AMENDMENT TO DETAIL B
NOT TO SCALE



SECTION H-H

FOR Ø0.375 HOLES ONLY
FOR HOLES THAT ARE CURRENTLY C'BORED ONLY
NOT TO SCALE

AFTER DRILLING AND BENDING ASSEMBLY
PERFORM THE FOLLOWING FOR Ø0.375 HOLES THAT ARE
CURRENTLY C'BORED:

1. INSERT D4720-1 SPACER, 18 PL (-041) OR 19 PL (-043)
2. SWAGE TO Ø0.313 X 0.75 DP PER QSI 002
3. TRIM / GRIND FLUSH PER QSI 002

RELEASE
2012-11-16
[Signature]

Change Record

PAGE 1 OF 1

Part Number: D206-642-151

Description: REPLACEMENT SKIDTUBE, LH/RH

[illegible]

DQA: _____ Date: _____



WORK ORDER NON-CONFORMANCE / UPDATE

QA Closed: _____ Date: _____

Work Order update only ☐

Work Order: _____ Part No. _____ NCR No. _____		DISPOSITION Rework ☐ Scrap ☐ Use-as-is ☐ Suspected Unapproved ☐		AGAINST DEPARTMENT/PROCESS Skid-tube ☐ Machining ☐ Thermoforming ☐ Large Fab ☐ Cross tube ☐ Small Fab ☐ Finishing ☐ Composite ☐ Water Jet ☐ Prod. Eng. Coord. ☐ Rec/Store/Packaging ☐ Supplier ☐ Engineering ☐ Quality ☐ Other ☐					
Date :		Step #:		QTY Effective :				MRB (QSI042) Approval	
Description Work Order Deviation				Disposition				Completed By	
								Lead hand / Supervisor Approval Verification	
								QC / QA Coordinator Approval	
Root Cause		FAULT CATEGORY							
Environment ☐	No Re-verification ☐	Pressure/Forced ☐	Temperature/Cure ☐	Power Loss/Surge ☐	Positioned Wrong ☐				
Design ☐	Operator ☐	Bending ☐	Set-up ☐	Folio/Program ☐	Outside Dimensions ☐				
Doc/Data ☐	Offset/Setup ☐	Centre Not Concentric ☐	BOM/Route ☐	Grain ☐	Over/Under tolerance ☐				
Equip/Tooling ☐	Supplier ☐	Cracks ☐	Broken/Damage/Defect ☐	Weld ☐	Part Incorrect ☐				
Handling/Pre ☐	Training ☐	Crimp/Kink/Ripple/Wave ☐	Inspection Incomplete/Unqualified ☐	Wrong Stock Pulled ☐	Part Lost/Missing ☐				
Material ☐	Use for Testing ☐	Cuffs ☐	Contamination ☐	Out of Sequence ☐	Part Moved ☐				
Internal Transport ☐	Poor Information ☐	Crushing ☐	Countersink ☐	Off-set ☐	Drawing ☐				
Tribal Knowledge ☐	Rushing ☐	Heat Treat ☐	Cut Too Short ☐	Mislabeled ☐	Finish ☐				
LOA ☐	Product Improvement ☐	Wave/Twist in Tube ☐	Instructions Incomplete/Unclear ☐	Fit/Function ☐	Misread ☐				
Substation ☐	Process Improvement ☐	Marks/Chatter ☐	Drill Holes ☐	Misaligned/off center ☐	Turning Sequence ☐				
Past Expiry Date ☐	Manufacturing Process ☐	OTHER : _____							
Misidentified ☐	Past Due ☐								